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ABSTRACT

The demand for and supply of skills in the automotive repairs and service trades in Australia were examined to identify skill shortages in the industry. Special attention was paid to the following items: (1) the industry's demand for skills (employment levels; growth; and prospects); (2) the supply of skills to the industry's existing work force (new apprenticeship patterns and trends; training undertaken through nonapprentice pathways; migration as a source of automotive skills; skills wastage from the automotive occupations); and (3) employers' recent experience of skill shortages (vacancy growth and employers' experiences and perspectives). Skill shortages were reported throughout the automotive repairs and service trades. The reported shortages were attributed not to traditional causes of skill shortage such as high levels of separation from the trades, low take-up of apprentices, or low levels of stock of skills in the work force. Rather, they were attributed to rapid changes in technology and the other skills now required by the sector and the currency of skills in the existing trade work force. It was suggested that the answer to skill shortages in the sector lies as much in recruitment and delivery strategies as in actually replacing and retaining the skills of the existing work force. (Contains 21 tables/figures/boxes.) (MN)

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Editor's note:

The information in this report was prepared in early 2000 and some of the trends, especially for vacancies, may have changed. While graphs in sections 3 and 4 note the original source of the data, DEWRSB prepared and supplied some of the graphs and associated tables.

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Preface

THREE WORKING GROUPS were established in late 1999 to examine trade skills shortages in the electrotechnology, engineering and automotive repairs and service trades. This followed discussions on emerging trade skills shortages between the Commonwealth Government and the leaders of Australia's major employer organisations—the Australian Chamber of Commerce and Industry (ACCI), the Australian Industry Group (AIG) and the Business Council of Australia (BCA).

The National Centre for Vocational Education Research (NCVER) was represented on each of the industry-led working groups. NCVER provided key statistical information and analysis of evidence of skill shortages in each of the trades under review. This analytical work proved important in each working group's deliberations about the specific nature of skill shortages in different trades and about proposals to address any emerging trade skills shortages.

This report on evidence of skills shortages in the automotive repairs and service trades is based on the analysis provided by NCVER to the Automotive Repairs and Service Working Group. This work also draws upon key information provided to the working group by the Department of Employment, Workplace Relations and Small Business (DEWRSB). NCVER has also recently published a more detailed statistical report as part of this exercise. That report is *Australian apprentice and trainee statistics: Automotive repairs and service trades 1995–1999*. This report revises and updates some of the figures presented in the above reports.

This report makes use of the terms 'apprenticeships' and 'traineeships', 'new apprenticeships' and 'contracts of training'. For all intents and purposes the terms are interchangeable. However, by way of clarification, it should be noted that apprentices and trainees enter into a contract of training for the term of their apprenticeship or traineeship. Australia has had apprenticeships since the early 1800s. Traineeships were introduced in 1985 to complement the apprenticeship system. Apprenticeships and traineeships were merged into a single national system—new apprenticeships—on 1 January 1998.

1 Introduction

EMPLOYERS IN A NUMBER of critical economic sectors have been reporting increased difficulties recently in securing the necessary skills in their industries.

The automotive trades are among those sectors experiencing difficulties in recruiting and retaining the right skilled people. This report is one of a series of reports prepared by the National Centre for Vocational Education Research (NCVER) and sets out to look in more detail at where shortages may be occurring through analysis of a range of data. In doing so, it looks first at what the common underlying factors giving rise to shortages might be. There are also factors which are specific to particular occupations and trades and this is especially true of the automotive repairs and service trades where changing skill requirements and the stock of vehicles are key determinants of shortages.

In developing appropriate industry or sector-based responses to skill shortages, it is necessary to first ascertain:

- To what extent do skill shortages exist in terms of the types of skills in short supply and the areas where they are in short supply?
- What are the underlying causes of the shortages that exist?

With respect to underlying causes, skill shortages in the trades can arise from:

- an inadequate number of people entering trade training
- a high attrition rate during the training period, which means not enough people are completing trade training and attaining the qualifications necessary for highly skilled/technical work in the trades
- a high separation from the skilled trades workforce once people are qualified; due to a variety of reasons, such as low demand for skills, declining industry employment prospects or better careers and conditions being offered in other industries/sectors
- an insufficient level of activity by the existing trade workforce in upgrading skills once initial qualifications have been attained

- a failure in the provision of training to ensure that the quality and relevance of training provision is keeping up with rapidly changing skills needs in the workforce
- a combination of the above

The automotive repairs and service trades present different challenges to the causes outlined above with an industry that is rapidly changing and moving to increased computerisation and component part manufacture. In addition, the segmentation of the industry into large corporate businesses and very much smaller independent operators is also having an impact on the kind of workforce needed and skills in demand. The industry reports that these changes are not readily understood or promoted among young people looking for new career opportunities.

It is likely, therefore, that the most pressing causes of skill shortages are those related to upskilling of the automotive repairs and service workforce and attracting suitable new entrants to that workforce, in line with changes experienced within the sector.

In this report, available evidence about patterns and trends in trades employment and training in the automotive repairs and service trades is reviewed in order to gauge the nature and extent of any skills shortages in these trades. NCVER has prepared this report using information supplied by NCVER, the Australian Bureau of Statistics (ABS) and the Department of Employment, Workplace Relations and Small Business (DEWRSB).

The automotive repairs and service trades include:

- motor mechanics
- automotive electricians
- panel beaters
- vehicle painters
- automotive electricians
- vehicle trimmers
- vehicle body makers

2 Demand for skills in the automotive repairs and service trades

2.1 Employment levels

TOTAL EMPLOYMENT IN the automotive repairs and service trades workforce is around 135 700 people. This amounts to some 1.6% of all employment in Australia and accounts for some 11.8% of total trades employment in Australia.

As shown in table 1, the largest single automotive repairs and service trades occupation is motor mechanics, accounting for over two-thirds of the total automotive repairs and service trades workforce. The next largest automotive repairs and service trades occupations are panel beaters and vehicle painters, accounting for 16.7% and 7.5% of automotive repairs and service trades employment respectively.

Table 1: Employment in automotive repairs and service trades occupations, August 1999

Trades occupation	Number ('000)	Share (%)
Motor mechanics	92.8	68.4
Panel beaters	22.7	16.7
Vehicle painters	10.2	7.5
Automotive electricians	5.9	4.3
Vehicle trimmers	2.1	1.5
Vehicle body makers	2.0	1.5
Total	**135.7**	**100.0**

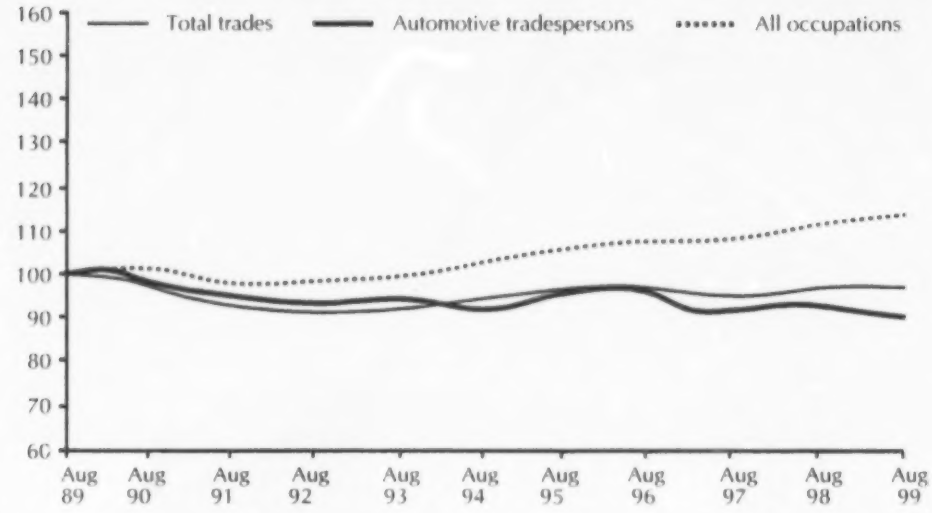
Source: Figures supplied to NCVER from ECONTECH

2.2 Employment growth

The automotive repairs and service trades have been generally experiencing a decline in employment. DEWRSB reported that automotive trades employment declined by 15 000 or 10.0% over the past decade.

As shown in figure 1, this decline represents a faster rate of decline than for trades employment overall.

Figure 1: Automotive repairs and service trades, total trades and total employment, 1989–1999 (indexed)



Source: Supplied to NCVER based on unpublished ABS data

2.3 Employment prospects

A precondition for the existence of skill shortages is usually (but not always) a rising demand for skilled labour in a growing labour market. Of course, it is possible for skill shortages to exist in a declining labour market, but this situation is much less frequent. It would appear that this is the case with shortages reported within the automotive repairs and service trades where employment in many occupations is declining.

Employment forecasts (made by using the Murphy Model) predict slight employment decline in the automotive repair and service trades of around -0.7% per year in the coming years. This is shown in table 2.

4

Table 2: Automotive repairs and service trade occupations employment forecasts

Trades occupation		Average annual growth	Total employment		Share of total employment	
		1997–98 to 2000–01 (% pa)	1997–98 ('000)	2000–01 ('000)	1997–98 (%)	2000–2001 (%)
4211	Motor mechanics	-0.7	96.2	94.2	1.1	1.1
4212	Automotive electricians	-0.8	6.8	6.7	0.1	0.1
4213	Panel beaters	-0.9	17.6	17.1	0.2	0.2
Total		**-0.7**	**120.6**	**118.0**	**1.4**	**1.4**

Source: Unpublished forecasts provided to NCVER by ECONTECH. The ECONTECH modelling methodology is described in Murphy, C. 1999

The projected decline is similar across the three different automotive repairs and service trade occupations.

These projections indicate employment decline in the next two years similar to that experienced over the past decade.

Longer term forecasts by DEWRSB (using the Monash Model) suggest that automotive repairs and service trades employment to the year 2004–05 is, on average, projected to grow at a slower rate than employment generally.

2.4 Overview of the demand for automotive repairs and service skills

The patterns of employment growth in the automotive repairs and service trades suggest a decrease in already declining employment in these trades. However, despite this decline, job vacancies for automotive trades have recently increased, almost as strongly as for the trades group in total.

DEWRSB reports that the demand for the automotive trades is closely linked to growth in the stock of motor vehicles and the age, condition and reliability of that stock. In particular, demand for motor mechanics and automotive electricians has been moderated by new technology, with newer vehicles requiring less frequent mechanical and electrical servicing and repair. In addition, demand for panel beaters and vehicle painters has been subdued in recent years. This is a result of industry rationalisation, some decline in serious motor accidents and the use of new materials, such as plastic panels, in motor vehicle manufacture. On the other hand, there is strong demand for workers skilled in specialisations such as transmissions, electronic fuel injection and liquefied petroleum gas (LPG).

The overall situation concerning the demand for trades skills in the automotive sector is summarised in box 1.

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Box 1: Demands for skills in the automotive repairs and service trades

- Demand for skills is taking place against a background of declining employment.
- Automotive repairs and service trades are a declining industry sector, with around 135 700 people in the skilled trades workforce, representing less than 2% of overall employment.
- Employment decline in the automotive skilled trades workforce over the past decade has been greater than for the workforces of all skilled trades in Australia.
- Total employment in the automotive repairs and service trades is projected to decline over the next few years.
- Job vacancies for automotive trades have recently increased, almost as strongly as for the trades group in total.

3 Supply of skills to the automotive repairs and service trades

THE SUPPLY OF SKILLS to the automotive repairs and service trades comes from four major sources:

- the skills of existing trades workforce, including the upgrading of skills of the existing workforce
- new apprentices entering the automotive trades
- skills training undertaken through other (non-apprentice) training pathways
- skilled migration into the automotive trades

Of course, the other critical issue with respect to the supply of skills to the automotive repairs and service trades concerns the rate of skills wastage arising from skilled and qualified labour leaving these skilled trades occupations.

Each of these factors is examined below.

3.1 Skills of the existing automotive repairs and service trades workforce

Close to 70% of the skilled trades workforce in the automotive repairs and service trades have post-school qualifications, as shown in table 3.

This is a much higher proportion than the average for the whole Australian workforce, this proportion being below 50%.

The information in table 3 shows the highest qualification attained. Some of those with degrees, diplomas and associated diplomas may also have vocational qualifications.

For the automotive repairs and service trades as a whole:

- Only around 1% of employed persons has a diploma or associate diploma (or equivalent) as their highest qualification, which is a very much lower rate than the 8% for the workforce as a whole.
- Almost 68% possess a skilled vocational qualification, compared to a workforce average of less than 20% of employed persons having a vocational qualification as their highest level attained.

Table 3: The education attainment of persons employed in the automotive repairs and service trades, and the total workforce, 1996

Occupational categories	Degree or higher	Diploma	Associate diploma	Skilled vocational qualification	Basic vocational qualification	Sub-total with qualifications	No qualification	Not stated/ unknown	Total
4211 Motor mechanics	410	350	620	55 690	710	57 770	20 340	4 440	**82 550**
4212 Automotive electricians	20	(a)	50	4 310	30	4 420	1 240	250	**5 910**
4213 Panel beaters	40	30	40	10 130	80	10 310	4 020	910	**15 240**
Total automotive repairs & service trades	**460**	**380**	**710**	**70 120**	**830**	**72 500**	**25 600**	**5 600**	**103 700**
Percentage of total Australian workforce	15.5	4.5	3.5	14.2	3.8	41.5	51.3	7.2	**100.0**

Sources: NCVER 1998, table A2, and unpublished data from the 1996 ABS Census of Population and Housing

- Fewer than 1% of those in the automotive repairs and service trades possess a degree level or higher qualification compared to over 15% having such qualifications in the workforce as a whole.

In relative terms, this means that the proportion of the workforce in the automotive repairs and service trades who possess relevant qualifications (i.e. diploma and other vocational qualifications) is high compared to the levels of qualifications attained in the workforce as a whole.

Significantly, the numbers who have no formal post-school qualifications, but are working in the automotive repairs and service trades, are less than 25% of the total workforce. This is a comparatively low level, given that around half of the Australian workforce reported having no post-school qualification in 1996.

A summary of the situation concerning the existing skills of the existing workforce is given in box 2.

Box 2: Skills of the existing automotive repairs and service trades workforce

- Some 70% of the existing automotive repairs and service trades workforce hold a post-school qualification, compared with only 50% of the workforce as a whole having qualifications.
- The incidence of vocational qualifications in the automotive repairs and service trades workforce is very high (68%), compared with fewer than 20% of the national workforce having a vocational qualification.
- One-quarter of the automotive repairs and service trades workforce have no formal qualifications. This situation may not meet contemporary industry needs for high-level technical skills.

3.2 New apprenticeship patterns and trends

Australia's national and State/Territory governments have reformed the apprenticeship and trainee system by making it more flexible and responsive to employer needs with the aim of ensuring that the highest quality training is provided. The new training arrangements covering apprenticeships and traineeships are collectively known as new apprenticeships. They were introduced from 1 January 1998.

Although new apprenticeships cover both apprentice and traineeship training, the vast majority of entry-level skills training in the automotive trades through contracts of training with employers occurs through the traditional apprenticeship pathway, leading to a Certificate III qualification (typically involving a four-year apprenticeship contract).

NCVER reports that of the 17 380 contracts of training shown in table 4, apprenticed trades (at the Certificate III level) account for over 95% of all those in a contract of training in automotive repairs and service trade occupations.

Table 4: Automotive repairs and service trades new apprenticeships, 31 December 1999

		Number of new apprentices	Proportion of total new apprentices (%)	New apprentices proportion of skilled trades workforce (%)
4211	Motor mechanics	13 890	80.0	14.6
4212	Automotive electricians	980	5.7	15.0
4213	Panel beaters	2 500	14.3	14.1
Total		**17 380**	**100.0**	**14.5**

Note: Figures may not total due to rounding
Source: Derived from unpublished NCVER apprentice and trainee data

As can be seen from table 4, the number of new apprenticeships as a proportion of the skilled trades workforce is much the same between the major occupations in the automotive repairs and service trades. In the motor mechanics occupation, apprentices make up 14.6% of the total skilled trades workforce in this occupation, 15% in automotive electricians and 14.1% in panel beaters.

Overall, the proportion of new apprentices in the total automotive repairs and service trades workforce is 14.5%. This is higher than for all skilled trades in Australia, where around 12% of the skilled trades workforce is supplied by those in new apprenticeships.

The key issues to consider in relation to the contribution of apprentices and trainees to the supply of skills are whether or not:

- the numbers entering contracts of training are sufficient to meet industry needs
- the numbers staying in apprenticeships and traineeships to complete their training are adequate

Apprenticeship training in the trades experienced a decline in Australia in the early 1990s from the record high levels of the late 1980s. Since the mid-1990s, we have seen a turnaround in this trend, with increasing growth in the past couple of years.

The number of apprentice and trainee commencements in the automotive repairs and service trades declined from 1995 to 1997. However, NCVER reported strong growth during 1998 and 1999 (see table 5).

The overall number of apprentices and trainees in training in the automotive repairs and service trades has declined since the mid-1990s with an annual growth rate of -1.3% over the period 1995 to 1999 (see table 6).

The decline in the numbers in training over the period 1995 to 1999 does not compare favourably to the overall projected net decline in employment of -0.7% per year in the automotive repairs and service trades. However, the recent increases in apprentice and trainee commencements in the automotive repairs

Table 5: Commencements in contracts of training in the automotive repairs and service trades, 1995 to 1999

		Number					Annual growth rate* 1995–1999 (%)	Annual growth rate* 1995–1998 (%)	Growth rate 1998–1999 (%)
		1995	1996	1997	1998	1999			
4211	Motor mechanics	4810	4370	4040	4480	4900	0.5	-2.3	9.3
4212	Automotive electricians	370	330	300	310	320	-3.5	-5.5	2.5
4213	Panel beaters	990	970	750	810	970	-0.5	-6.4	19.4
Total		**6170**	**5670**	**5090**	**5610**	**6190**	**0.1**	**-3.1**	**10.4**

Note: *Annual rates of growth are compound growth rates
Figures may not total due to rounding
Source: Derived from unpublished NCVER apprentice and trainee data

Table 6: The number of apprentices and trainees in contracts of training in the automotive repairs and service trades, 1995 to 1999

		Number					Annual growth rate* 1995–1999 (%)	Annual growth rate* 1995–1998 (%)	Growth rate 1998–1999 (%)
		1995	1996	1997	1998	1999			
4211	Motor mechanics	14 710	14 880	14 520	13 960	13 890	-1.4	-1.7	-0.5
4212	Automotive electricians	1 020	1 060	1 050	1 020	980	-0.9	-0.1	-3.2
4213	Panel beaters	2 580	2 770	2 630	2 470	2 500	-0.9	-1.5	1.0
Total		**18 320**	**18 710**	**18 200**	**17 450**	**17 380**	**-1.3**	**-1.6**	**-0.4**

Note: *Annual rates of growth are compound growth rates
Figures may not total due to rounding
Source: Derived from unpublished NCVER apprentice and trainee data

Table 7: Completions from contracts of training in the automotive repairs and service trades, 1995 to 1999

		Number					Annual growth rate* 1995–1999 (%)	Annual growth rate* 1995–1998 (%)	Growth rate 1998–1999 (%)
		1995	1996	1997	1998	1999			
4211	Motor mechanics	2580	2970	3290	3550	3160	5.2	11.2	-10.9
4212	Automotive electricians	160	200	200	260	250	11.1	15.9	-2.0
4213	Panel beaters	470	460	490	550	520	2.5	4.9	-4.6
Total		**3210**	**3630**	**3970**	**4350**	**3930**	**5.2**	**10.6**	**-9.6**

Note: *Annual rates of growth are compound growth rates
Figures may not total due to rounding
Source: Derived from unpublished NCVER apprentice and trainee data

and service trades will see an improvement with the raising of the ratio of new apprentices to the total skilled trades workforce in Australia's automotive repairs and service trades sector.

If we consider apprentice and trainee completions (table 7, p.11), we see that 3930 people completed their new apprenticeship in 1999. Taking a crude completion rate, this amounts to a completion rate of around 65% of those commencements in 1995 (noting that the most prevalent contracts of training in these trades average around four years duration). This suggests a reasonably healthy rate of completion.

Moreover, strong growth in completions was attained between 1995 and 1998 with the annual growth rate being 10.6%. However, the number of completions fell by 9.6% in 1999. It is important to note, however, that NCVER has suggested there may be inherent problems with completions data and they may be understated due to under reporting.

Looking more specifically at commencements and numbers in training by level of qualification (see table 8), the greatest growth from 1995 to 1998 was in Certificates I and II (57.4% and 41.3% respectively) compared to Certificate III and above (-2.2% and -0.8%). Overall numbers at Certificates I and II though remain negligible. Further, during 1999, there was a drop in the number of Certificate I and II commencements while commencements at Certificate III and above rose by over 11%. A similar pattern is seen for the numbers in training.

Table 8: Automotive repairs and service trades by AQF

	Number			Annual growth rates*	
	1995	1998	1999	1995–1998 (%)	1998–1999 (%)
Commencements					
Certificate I and II	30	120	80	57.4	-31.4
Certificate III and higher	5 870	5 480	6 110	-2.2	11.4
Not known	270	(a)	0	-75.4	-100.0
Total	**6 170**	**5 610**	**6 190**	**-3.1**	**10.4**
Total in training					
Certificate I and II	40	120	120	41.3	-2.4
Certificate III and higher	17 200	16 780	16 930	-0.8	0.9
Not known	1 080	550	320	-20.2	-40.8
Total	**18 320**	**17 450**	**17 380**	**-1.6**	**-0.4**

Note: *Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
Figures may not total due to rounding
Source: Derived from unpublished NCVER apprentice and trainee data

A significant issue with respect to the supply of skills to the trades through new apprenticeships is the age of apprentices and trainees.

NCVER reports that, whilst there was a decline in the number of commencing apprentices (and trainees) aged 15–19 years between 1995 and

1998, there was a rise of 11% during 1999. The number of commencing apprentices (and trainees) in the 20–24 and 25 years or more age groups also grew. This is shown in table 9.

Table 9: The age of new apprentices in the automotive repairs and service trades

	Number			Annual growth rates*	
	1995	1998	1999	1995–1998 (%)	1998–1999 (%)
Commencements					
15–19 year olds	4 910	4 220	4 690	-4.9	11.0
20–24 year olds	1 000	1 060	1 130	1.9	6.5
25 years or more	250	320	370	8.5	14.8
All ages	**6 170**	**5 610**	**6 190**	**-3.1**	**10.4**
Total in training					
15–19 year olds	7 560	6 640	6 910	-4.3	4.2
20–24 year olds	9 830	9 620	9 180	-0.7	-4.6
25 years or more	930	1 200	1 280	8.9	6.9
All ages	**18 320**	**17 450**	**17 380**	**-1.6**	**-0.4**

Note: *Annual rates of growth are compound growth rates
Figures may not total due to rounding
Source: Derived from unpublished NCVER apprentice and trainee data

NCVER reports that demographic projections show that the numbers of persons in Australia aged 15–24 years will not grow in absolute terms over the next 20 years. In fact, the relative proportion of young people in the population will fall considerably. This means the source of new skills for the automotive repairs and service trades, as for all other occupations, will have to increasingly come from apprentices and trainees, who are older when commencing a contract of training.

The other issue of relevance here is the very low level of new apprenticeships in schools in relation to the automotive repairs and service trades. NCVER data show that for the automotive repairs and service trade occupations, the number of apprentices and trainees who commenced their apprenticeship or traineeship whilst still attending school comprise an insignificant proportion for each year 1995 to 1999.

Clearly, this is an area for consideration in any strategy to boost the intakes of younger people to new apprenticeships in the automotive repairs and service trades.

A summary of the situation concerning the contribution of apprentices and trainees to the automotive repairs and service trades is given in box 3.

Box 3: Supply of automotive repairs and service apprentices and trainees

- The number of apprentices and trainees (now called new apprenticeships) in a contract of training with an employer in the automotive repairs and service trades is now around 17 400, having declined with an annual growth rate of -1.3% since the mid-1990s.
- Commencements in automotive repairs and service trades new apprenticeships grew at a rate of 10.4% during 1999. If continued, this would be sufficient to more than meet projected employment levels (with projected decline of 0.7% per year in the skilled automotive repairs and service trades). This suggests insufficient entry to trades apprenticeships is currently not the predominant cause of any skill shortages.
- Apprentice and trainee completions in the automotive repairs and service trades grew strongly between 1995 and 1998. However, completions declined during 1998. This means measures to encourage completion of new apprenticeships must be a critical element of any strategy to boost skills in the automotive repairs and service trades.

3.3 Training undertaken through non-apprentice pathways

This section looks at the general vocational education and training (VET) student population in 1998 for automotive repairs and service trade occupations but excluding those in streams in which apprentices and trainees would be expected to be most likely enrolled (i.e. streams 3211, 3212, 3221).

It should be noted that for the apprentice and trainee data presented elsewhere in this report, the Australian Standard Classification of Occupations (ASCO) code is based in apprentices' and trainees' declared vocation; that is, the actual job that they are employed in. The data presented in this section are based on occupation codes assigned to courses to indicate the most likely occupation to which the course is relevant. However, students undertaking a VET course may not necessarily gain employment in the automotive repairs and service trades occupation assigned to the course.

The data in this section therefore provide a rough estimate of the amount of non-apprentice and non-trainee VET activity relevant to the automotive repairs and service trade occupations, regardless of whether or not this training is actually utilised in these occupations.

Indications are that around 6830 students were enrolled in a non-apprentice or non-trainee VET course in 1998 relating to the automotive repairs and service trade occupations. Over a quarter of these, 27.1%, were at Australian Qualifications Framework (AQF) level III or equivalent or higher levels (see table 10).

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Table 10: Training in the automotive repairs and service trades—non-apprentice and non-trainee VET students, 1998

	Diplomas	AQF Certificate IV and equivalent	AQF Certificate III and equivalent	AQF Certificate I and II	Other certificates, endorsements and other	Statements of attainment	Non-award courses	Total students
4211 Motor mechanics	0	910	650	1140	470	2160	870	**6120**
4212 Automotive electricians	0	270	0	0	150	260	(a)	**690**
4213 Panel beaters	0	0	20	30	0	20	0	**60**
Net total	**0**	**1180**	**670**	**1170**	**610**	**2410**	**870**	**6830**

Note: (a) Represents figures between 1 and 9 inclusive
Source: Derived from unpublished NCVER apprentice and trainee data

This means that non-apprenticeship training pathways are emerging as a strong source of skills for the automotive repairs and service trades.

The NCVER figures show that by the end of 1998 (i.e. on 31 December 1998) there were 17 450 in new apprenticeships in the automotive repairs and service trades. This compares with 6830 enrolments during 1998 in VET courses that are orientated towards skills for the automotive repairs and service trade occupations but do not involve a new apprenticeship.

A wide variety of training is occurring in these programs. For instance, of these non-apprentice students:

- 17.3% were in advanced/high level courses leading to Certificate IV level qualifications
- 9.8% were in Certificate III programs, which are traditionally done through apprenticeships
- 17.1% were in Certificate I and II level programs
- 56.9% were undertaking skills training not leading to award or full qualifications

This non-apprentice training activity represents a range of training pathways, from advanced technical courses leading to high level qualifications through to persons already employed in the industry upgrading their skills through enrolment in one or more modules.

The importance of non-apprenticeship pathways as a source of skills for automotive repairs and service trade occupations is summarised in box 4.

Box 4: Non-apprentice pathways for skills in automotive repairs and service trades

- Alternative vocational pathways are an important source of skills for automotive repairs and service trade occupations in Australia in addition to the traditional apprenticeship pathway.
- Throughout 1998 there were some 6830 enrolments in VET programs that were not new apprenticeships. This compares with 17 450 new apprentices in training at the end of 1998.
- Of these non-apprenticeship enrolments, 27.1% were in courses at the Certificate III level or higher whilst 17.1% were at Certificate level I or II.
- Non-apprenticeship pathways need to be given as much priority as new apprenticeship pathways in any overall skill formation policies for the automotive repairs and service trades, particularly given that new sources of relevant skills will need to come increasingly from older persons in the future.

3.4 Migration as a source of automotive repairs and service skills

Migration of skilled labour is a source of skills that supplements the domestic skill base in the automotive repairs and service trades.

DEWRSB reports that in recent years net migration of automotive tradespersons has fluctuated around 400 to 550, with arrivals of around 700 to 1200 partly offset by departures of about 300 to 600. This is shown in table 11.

Table 11: Migration of automotive tradespersons

Year	Permanent and long-term arrivals	Permanent and long-term departures	Net permanent and long-term			
			Settler	Long-term residents	Long-term visitors	Permanent and long-term total
1996-97	717	291	377	78	-29	426
1997-98	1091	618	403	114	-44	473
1998-99	1192	640	504	67	-19	552

Source: Data supplied to NCVER by the Department of Employment, Workplace Relations and Small Business

Thus, although migration is adding to the skilled workforce, it is a relatively insignificant source of skills for the automotive repairs and service trades in Australia.

3.5 Skills wastage from the automotive repairs and service occupations

The issue of the extent to which qualified and skilled tradespersons leave their employment in their skilled trade is a critical one. This is because the formation of new skills in the trade must be sufficient:

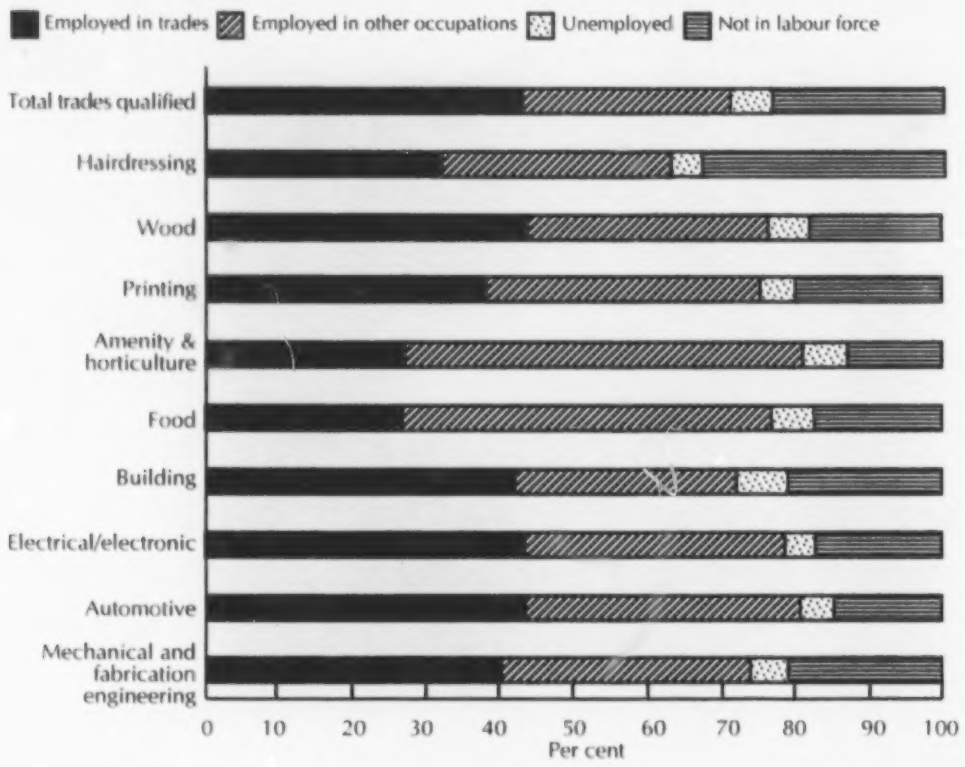
- not only to meet skills needed to fuel growth in the industries
- but also to replace those skills leaving through occupational wastage

DEWRSB reports that the proportion of automotive tradespersons who leave these occupations appears to be below the average for all occupations. Nevertheless, a considerable proportion of qualified automotive tradespersons leave trade employment for non-trade employment. Analysis of 1996 Census data shows for those with automotive trade qualifications:

- 43% were working in an automotive trades occupation
- 38% were working in a non-trade occupation
- 5% were unemployed
- 15% were not in the labour force (includes those who retired)

The proportion of qualified automotive tradespersons who were working in their trade (43%) was higher than the average (38%) for all trades in the Australian workforce (see figure 2).

Figure 2: Trades-qualified persons aged 15 and over—proportion in trades employment, employed in other occupations, unemployed and not in the labour force, 1996



Note: 'Other occupations' includes occupations not adequately described and not stated
Source: Data supplied to NCVER from the 1996 ABS Census of Population and Housing

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Wastage from skilled trades can often be due to an ageing of the skilled workforce and high wastage rates because of the retirement of skilled workers. However, the wastage that is occurring from the automotive trades does not appear to be due to a higher than average age profile. In fact, the automotive trades tend to have a younger age profile (see table 12). Only the motor mechanics occupation had a proportion of 45–64 year olds relatively higher than the proportion for all trades.

Table 12: Age profile of the automotive trades (% in age group)

Occupation	Age range		
	15–24	25–44	45–64
Motor mechanics	27.7	50.4	26.5
Vehicle body makers	28.0	50.3	21.2
Panel beaters	29.4	50.4	19.5
Vehicle trimmers	23.6	54.6	19.2
Automotive electricians	31.2	51.5	16.6
Vehicle painters	23.6	51.9	14.2
All trades	23.0	52.1	24.2
All occupations	18.0	51.6	28.8

Source: Data supplied to NCVER from the 1996 ABS Census of Population and Housing

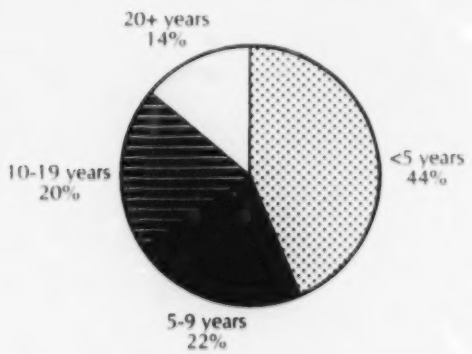
The DEWRSB analysis shows that career progression by automotive tradespersons is a significant component of wastage. Slightly more than one-third of the 38% of automotive tradespersons working in a non-trade occupation were employed in a more highly skilled occupation, while the remainder were employed in a less skilled occupation.

Those moving to a more highly skilled occupation moved to a wide range of occupations; with shop managers being a key area of employment.

Those moving to lesser skilled occupations also moved to a wide range of occupations; the most important of the lesser skilled occupations were transport drivers, sales representatives, sales assistants, and cleaners.

DEWRSB reports there are no particularly unusual patterns in the automotive trades with respect to how long people stay working in their trades. Some 44% of automotive tradespersons who left their trade did so within five years of employment, while two-thirds (66%) of those who left their trade did so within the first 10 years of employment in their trade (figure 3). This is a similar pattern to that for the trades group as a whole.

Figure 3: Trades-qualified persons who have left the automotive trades, by time in trade



Source: Supplied to NCVER based on unpublished ABS data

It is also important to consider the reasons why automotive tradespersons leave their trade when looking at what can be done to increase the retention of skills in the automotive trades. DEWSRB reports that, according to the ABS publication on career paths of persons with trade qualifications, the main reasons why automotive tradespersons left the trade were because they 'sought better pay, lack of career prospects or promoted', because they were 'laid-off, or lack of work' or because they 'wanted a change, or dissatisfied with job'. These reasons were given by 25%, 21% and 21% respectively of automotive tradespersons (see table 13).

Table 13: Main reason trades-qualified persons left the automotive trades

	Proportion (%)
Sought better pay, lack of career prospects or promoted	24.9
Laid off, or lack of work	21.4
Wanted a change, or dissatisfied with job	21.0
Family, personal, or ill health	15.6
More job security or sought better physical working conditions	9.5
Other	7.6
Total	**100.0**

Source: Supplied to NCVER based on unpublished ABS data

The ranking pattern of reasons for leaving the automotive trades was slightly different to that for all trades. The proportion of automotive tradespersons who cited 'sought better pay, lack of career prospects or promoted' as the main reason for leaving the trade was slightly higher than for the trades in total, 25% of automotive tradespersons compared with 19% of all tradespersons.

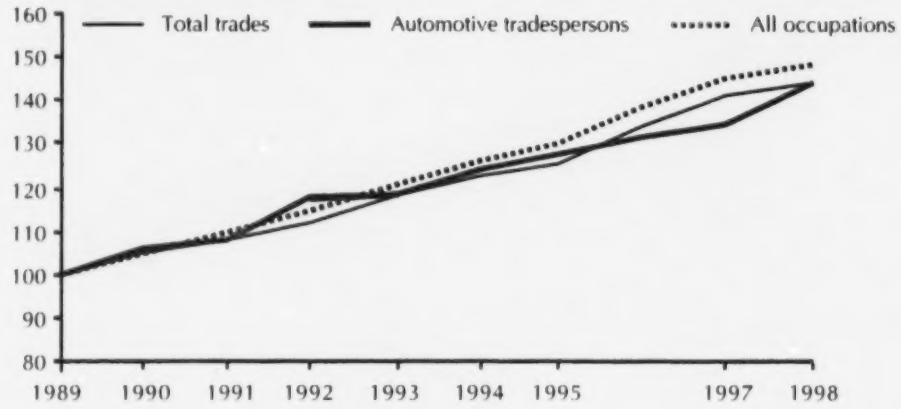
A number of factors could account for those who 'wanted a change, or (were) dissatisfied with work', including a reaction to chemicals used by vehicle painters and a desire for cleaner work.

DEWRSB also reports that there is some evidence to suggest that a significant number of those who left their trade could be enticed back. The ABS survey also showed that, of those who left the automotive trades, 44% would consider returning to the automotive trades. This is a marginally lower proportion than for the trades group in total where 46% would consider returning to their trades.

A return to the automotive trades was not, however, unconditional. The extent of ready availability of trade and alternative non-trade employment is a major consideration. The other major consideration is 'better pay, promotion or improved career prospects'.

Despite the issues raised by people who have left the trades, it is interesting to note that average weekly earnings for those in automotive trades have grown significantly throughout the 1990s (figure 4). Moreover, growth of earnings in these occupations has been similar to that of the trades generally but has not kept pace with average weekly earnings of all occupations.

Figure 4: Indexed mean weekly earnings for the automotive trades, all trades and all occupations, 1989–1998



Source: Supplied to NCVER based on unpublished ABS data

DEWRSB also notes that wastage from the automotive trades in the next few years is likely to be a smaller problem than that for other trades in the Australian economy. Wastage from the automotive trades, in general, is projected to be relatively low and to be lower than trades generally (see table 14, p.22).

The implications of the wastage of skills from the automotive trades workforce on the overall supply of skills to these trades is summarised in box 5.

Box 5: Implications of skills wastage for the skilled automotive trades workforce

- The automotive trades have been more successful than other trades in retaining qualified persons within the skilled trades workforce. Some 43% of qualified automotive tradespersons are working in their trades, compared with only 38% for all trades.
- Of those now not working in an automotive trade, the majority are working in other areas of the labour market, rather than having left the labour market or becoming unemployed.
- Forecasts are for low wastage rates in the future.
- There is some potential to lower net wastage rates from these trades as 44% who have left say they would consider returning with improved pay and career prospects, which is only slightly lower than the 46% all trades average who say they could be induced to return to their trade.

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Table 14: Trade wastage projections

Trade occupation (ASCO second edition)	Wastage to 2004–05
Mechanical engineering tradespersons	⇊
Fabrication engineering tradespersons	↑
Automotive tradespersons	↓
Electrotechnology tradespersons	↓
Structural construction tadespersons	↔
Final finishes construction tradespersons	↔
Plumbers	⇊
Food tradespersons	↑
Skilled agricultural workers	⇊
Horticultural tradespersons	↔
Printing tradespersons	↔
Wood tradespersons	↓
Hairdressers	⇈
Textile, clothing/related tradespersons	↔
Miscellaneous tradespersons	↓
Total tradespersons	↔

Note: ⇈ well above average ↑ above average
↔ average
⇊ well below average ↓ below average

Source: Wastage projections prepared by the ACER Centre for the Economics of Education and Training, Monash University under contract to DEWRSB

4 Employers' recent experience of skill shortages in the automotive trades

THE EVIDENCE PRESENTED to date suggests that the combination of commencements in new apprenticeship training and the now very significant set of non-apprenticeship training pathways to the automotive trades have been sufficient to keep up with overall employment levels in the automotive trades. This situation has been aided by automotive trades having:

- better earnings and career prospects than other trades
- lower rates of wastage than other trades
- higher levels of qualified persons in the trades workforce

In terms of traditional measures of skill shortage, the automotive trades do not appear to be in a critical stage of demand, given the factors described below:

- forecasts of automotive trades employment growth at a slower rate than in the past and at a slower rate than for many other occupations
- overall a relatively robust 14.5% of the automotive trades workforce being made up of new apprentices in training
- an increase in the growth of new apprentice completions during 1998

Further significant changes in the industry include:

- the age of the Australian vehicle fleet has shrunk and vehicle reliability and warranty conditions have improved
- decrease in vehicle collisions

Nevertheless, according to the report of the Victorian Automobile Chamber of Commerce, *Skill shortages in the retail motor industry* (VACC 2000), employers have recently reported increased skill shortages, particularly in metropolitan regions. Such demand may be attributed to:

- the changing skill demands in the automotive trades and the mix of new skill requirements
- higher levels of demand in some geographic regions
- a rise in specialist technologies based on computerisation and electronics
- growth in job vacancies over the last two years (see below)

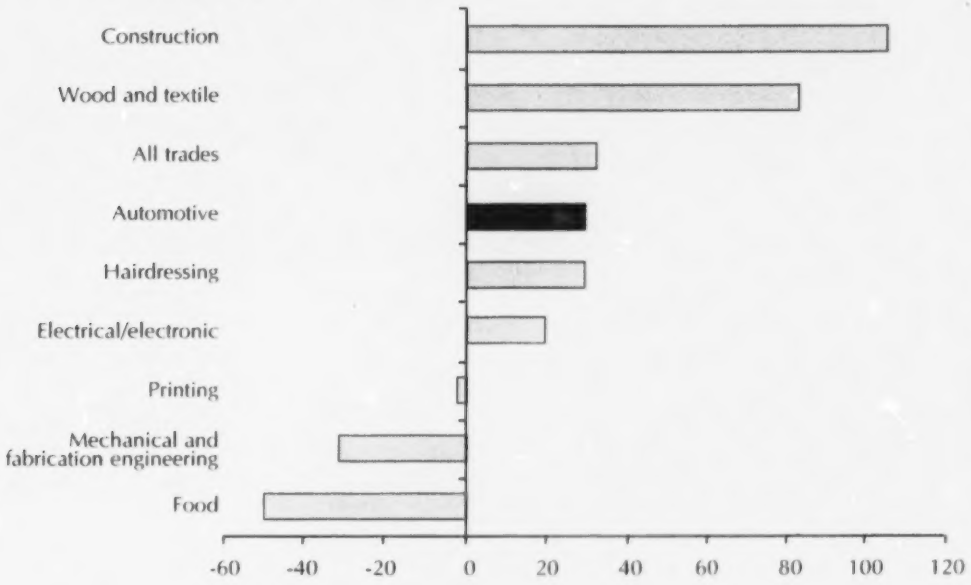
These factors have led to employers recently reporting increased skill shortages.

4.1 Vacancy growth

DEWRSB notes that although employment has declined, job vacancies for automotive trades have increased recently, but not as strongly as for the total trades group, which was heavily influenced by strong growth in the building and construction trades.

DEWRSB carries out a periodic Skilled Vacancy Survey. From the survey a rise of 30% in vacancies for the automotive trades was recorded over the two years to October 1999. This growth in vacancies is similar to the 33% rise over the past two years recorded for all skilled trades as shown in figure 5.

Figure 5: Growth in trades groups and total trade vacancies over the two years to October 1999



Source: Data supplied to NCVER by the Department of Employment, Workplace Relations and Small Business

Nevertheless, the key point is that reported vacancies in the automotive trades are now expanding at a rate that appears to be outstripping the growth in automotive trades employment.

Information from the Labour Market Survey of Apprentices undertaken by DEWRSB in mid-1998 indicates that there are sufficient suitable applicants for automotive apprenticeships. This is despite some tightening between 1997 and 1998 where the number of suitable applicants for apprenticeships in the automotive trades fell from 4.1 per apprentice recruited to 3.2. This tightening was not evident, however, for group training company apprentice recruiting with the ratio of suitable applicants rising from 2.7 in 1997 to 3.7 in 1998. DEWRSB adds that the youth labour market has tightened further since the survey was undertaken.

4.2 Employers' experiences and perspectives

DEWRSB's recent assessment (of the period September to October 1999) of skill shortages in the trades shows that shortages of most automotive trades exist across Australia (see table 15).

Table 15: Automotive trades skill shortages by State and Territory[a]

Tradespersons	NSW	VIC	QLD	SA	WA	TAS	NT	National
Motor mechanics	S	S	S	S	S	S	S	N
Automotive electricians	S	S	S	S	S	S	S	N
Panel beater	M	S	S	S	S	S	R	N
Vehicle painter	M	S	S	S	S	S	R	N

Note: M = Metropolitan R = Regional S = Statewide N = National
(a) As assessed by DEWRSB

DEWRSB notes that in New South Wales, 45% of job vacancies for motor mechanics were filled within four weeks in mid-1999 compared with approximately 40% in mid-1998. This rate was higher for panel beaters, 60% in 1999 compared with 40% in 1998. This is likely to owe much to structural changes within the industry, discussed earlier, giving rise to a higher than usual rate of business closure in the collision repair industry. In Victoria, 50% of employers filled automotive electrician positions within four weeks of advertising, while 70% of employers filled motor mechanic positions and 90% of employers filled collision repair positions.

A summary of employers' experiences with skill shortages in the automotive trades is given in box 6.

Box 6: Employers' experiences of automotive trades skill shortages

- The DEWRSB Skilled Vacancy Survey shows a 33% growth in automotive skilled vacancies over the past two years, a rise consistent with the average for all trades.
- DEWRSB reports a decline in unfilled vacancies in the panel beating trade due to business closure and restructuring of the industry.
- The labour market for apprentices has tightened with the number of suitable applicants for each apprentice recruited in the automotive trades falling from 4.1 to 3.2 between 1997 and 1998.
- Reported vacancies in the automotive trades are now expanding at a rate that appears to be outstripping the growth in automotive trades employment.

5 Conclusion

IN CONCLUSION, the automotive repairs and service trades are reporting skills shortages and this needs to be addressed through a variety of strategies. It is important to note, though, that the shortages do not arise from traditional causes of skill shortage such as high levels of separation from the trades nor, at this stage, from low take-up of apprentices or low levels of stock of skills in the workforce. On all of these indicators, the sector compares favourably with other trade workforces and with the workforce as a whole. Added to this, the decline in commencements of apprenticeships over the period 1995 to 1997 reported by NCVER is in line with projected decline in demand, particularly for the trade of panel beating.

Rather, the critical skills issue for the sector is the rapid change in technology and other skills now required by the sector and the currency of skills in the existing trade workforce. Both of these factors mean that the sector is looking increasingly to high quality recruits to apprenticeships for individuals with the ability and attributes to pursue a career in a modern technological industry. Neither NCVER nor DEWRSB data provide any detail on reasons for skilled vacancies or the quality of apprentice and trainee applicants and employer reasons for not taking on apprentices. In view of this, it is likely that the answer to skill shortages in the sector lie as much in recruitment and delivery strategies as they do in actually replacing and retaining the skills of the existing workforce.

References

Murphy, C 1999, 'Where the jobs are: The outlook for jobs' in *Future training issues in Australia's industries*, ed. P Curtin, NCVER, Adelaide.

NCVER (National Centre for Vocational Education Research) 1998, *The outlook for training in Australia's industries*, NCVER, Adelaide.

VACC (Victorian Automobile Chamber of Commerce) 2000, *Skill shortages in the retail motor industry: An interim report*, report prepared for the Automotive Working Group, VACC, Victoria.

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